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REMARKS

This preliminary amendment is being filed in response to the Notice of Omitted Items of March 22, 2004 which claimed that Applicants had omitted page 76 of the specification when filing the application. Applicants assert that page 76 (see Appendix A) was acknowledged as being received by the USPTO as evidenced by the date stamped return post card (see attached copy in Appendix A). The return post card properly indicates that the filed application included 72 pages of specification, 8 pages of claims, and a one page abstract for a total of 81 pages.

Applicants have chosen not to file a petition under 37 CFR 1.53(e) contesting the Notice of Omitted Items since the subject matter of disputed page 76 is encompassed by the filed specification and claims, and to speed prosecution of this application. Disputed Page 76 contains a portion of Claim 13 (an independent claim) and all of Claims 14-17. By way of this amendment Claims 13-23 have been cancelled and Claims 35-45 have been added. Claim 35 corresponds to cancelled Claim 13. Claims 36-45 correspond to Claims 14-17 and filed Claims 18-23. Claims 35-45 have been grouped together to reduce confusion during prosecution of this application. Support for Claims 35-45 can be found throughout the specification and drawings with specific reference to Claims 1-12, pages 14-30, and Figures 1-11. No new

matter has been added and the amendments to Claims 13-23 and 35-45 are non-narrowing.

Applicants request that the specification be amended to change the page numbers so that the filed application has pages 1-80 instead of having pages 1-75 and 77-81. A revised copy of the five pages that were originally numbered as pages 77-81 is attached in Appendix B; the attached pages have revised page numbers of 76-80.

Applicants note that disputed page 76 included 4 dependent claims for which $72 was provided in the original filing fee. Therefore there was a $72 overpayment of the filing fee since the application without disputed page 76 included only 30 total claims, those being Claims 1-13 and 18-34. Please apply the $72 credit to deposit account number 50-1236, referencing the above attorney docket number.

Revised Fee Calculation:

| | |
|---|---|
| Basic Filing Fee | $ 770 |
| 10 Claims in excess of 20 times $18 | $ 180 |
| 0 Independent claims in excess of 3 | $ 0 |
| 0 New multiple dependent claims | $ 0 |
| Total fee | $ 950 |

Original Fee Calculation:

| | |
|---|---|
| Basic Filing Fee | $ 770 |
| 14 Claims in excess of 20 times $18 | $ 252 |
| 0 Independent claims in excess of 3 | $ 0 |

| | |
|---|---|
| 0 New multiple dependent claims | $ 0 |
| Total fee | $1022 |

Applicants ask that all claims be examined. Enclosed is a credit card payment in the amount of $72 for excess claim fees. Please apply any other charges or credits to Deposit Account No. 50-1236. If the Examiner would like to discuss the matter further, the undersigned may be contacted at (858) 350-8998.

Respectfully submitted,

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means for generating a drive signal, in response to the digital sense signal, to control the power output generating means.

14. The output regulator of Claim 13 wherein the power output generating means has a configuration selected from the group consisting of linear regulators and switching regulators.

15. The output regulator of Claim 14 wherein the power output generating means of the switching regulator is a topology selected from the group consisting of buck, boost, Cuk, zeta, buck-boost, and sepic.

16. The output regulator of Claim 13 wherein the means for generating the digital sense signal includes means for determining a difference between a reference voltage and the regulated output.

17. The output regulator of Claim 14 further comprising a control mode selected from the group consisting of voltage mode and current mode.

Express Mail No. EU328702228US Attorney Docket No.: MP0185.D1

The Patent and Trademark Office date stamp sets forth the receipt date (or both the receipt date and the Serial Number) of a patent application identified as follows:

Applicant: Sehat Sutardja et al

Title: Output Regulator System and Method

[X] Transmittal Letter
[X] Appl 72 Pages of Spec. 8 Pages of Claims 34 Total Claims 1 Pages of Abstract
[ ] Rule 62 Filing Request (FWC)____ Pages
[ ] Assignment
[ ] Recordation Cover Sheet
[ ] Check $_____
[ ] Small Entity Statement
[X] Drawings 26 Sheets Formal____Sheets Informal
[X] Combined Declaration and Power of Attorney X signed____unsigned
[ ] Preliminary Amendment____Pages
[X] Information Disclosure Statement
[X] PTO 1449 Form 1 Pages
[X] Prior Art References, Number of References____
[ ] Priority Document____Pages
[X] Submission of Credit Card Payment
[ ] Request and Certification under 35 USC 122(b)(2)(B)(i)
[ ] Other_____

copy of declaration from parent application

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18. The output regulator of Claim 17 wherein the means for generating the drive signal further includes means for generating a duty cycle estimation to estimate a duty cycle of the drive signal.

19. The output regulator of Claim 18 wherein the means for generating the duty cycle estimation further includes means for generating an incremental delay to adjust the duty cycle estimation.

20. The output regulator of Claim 13 wherein the regulated output is selected from the group comprising output voltage and output current.

21. The output regulator of Claim 13 further comprising means for setting a nominal value of the regulated output.

22. The output regulator of Claim 21 wherein the means for setting the nominal value further includes means for generating a reference signal in response to an input, the reference signal to set the nominal value of the regulated output.

23. The output regulator of Claim 13 wherein the reference ranges are selected from the group consisting of overlapping and consecutive.

24 A method of generating a regulated output from an input voltage, comprising:

generating a power output from the input voltage;

filtering the power output to generate the regulated output;

generating a digital sense signal to indicate within which of at least three reference ranges the regulated output is included, each of the at least three reference ranges including a plurality of possible values of the regulated output; and

generating a drive signal, in response to the digital sense signal, to control the power stage.

25. The method of Claim 24 wherein the power stage has a configuration selected from the group consisting of linear regulators and switching regulators.

26. The method of Claim 25 wherein generating the power output includes using a topology selected from the group consisting of buck, boost, Cuk, zeta, buck-boost, and sepic.

27. The method of Claim 24 wherein generating the digital sense signal includes determining a difference between a reference voltage and the regulated output.

28. The method of Claim 25 further comprising a control mode selected from the group consisting of voltage mode and current mode.

29. The method of Claim 28 wherein generating the drive signal further includes generating a duty cycle estimation to estimate the duty cycle of the drive signal.

30. The method of Claim 29 wherein generating the duty cycle estimation further includes generating an incremental delay to adjust the duty cycle estimation.

31. The method of Claim 24 wherein the regulated output is selected from the group comprising output voltage and output current.

32. The method of Claim 24 further comprising setting a nominal value of the regulated output.

33. The method of Claim 32 wherein setting the nominal value further includes generating a reference signal in response to an input, the reference signal to set the nominal value of the regulated output.

34. The method of Claim 24 wherein the reference ranges are selected from the group consisting of overlapping and consecutive.

ABSTRACT

An output regulator to convert an input voltage to a regulated output. The output regulator including a power stage to generate a power output from the input voltage. An output filter to filter the power output to generate the regulated output. An output sensor to generate a digital sense signal to indicate within which of at least three reference ranges the regulated output is included. Each of the at least three reference ranges including a plurality of possible values of the regulated output. A digital controller, responsive to the digital sense signal, to generate a drive signal to control the power stage.